

L Number	Hits	Search Text	DB	Time stamp
1	243	((264/37.3) or (264/37.31) or (264/37.32) or (264/37.33)).CCLS.	USPAT; US-PGPUB	2003/01/07 17:07
2	253	((264/911) or (264/913) or (264/918) or (264/917) or (264/920) or (264/921)).CCLS.	USPAT; US-PGPUB	2003/01/07 17:08
3	468	((264/37.3) or (264/37.31) or (264/37.32) or (264/37.33)).CCLS.) or ((264/911) or (264/913) or (264/918) or (264/917) or (264/920) or (264/921)).CCLS.)	USPAT; US-PGPUB	2003/01/07 17:08
4	53	((264/37.3) or (264/37.31) or (264/37.32) or (264/37.33)).CCLS.) or ((264/911) or (264/913) or (264/918) or (264/917) or (264/920) or (264/921)).CCLS.) and polycarbonate\$	USPAT; US-PGPUB	2003/01/07 17:25
5	221	((264/911) or (264/913) or (264/918) or (264/917) or (264/920) or (264/921)).CCLS.) not (((264/37.3) or (264/37.31) or (264/37.32) or (264/37.33)).CCLS.) or ((264/911) or (264/913) or (264/918) or (264/917) or (264/920) or (264/921)).CCLS.) and polycarbonate\$)	USPAT; US-PGPUB	2003/01/07 17:34
6	2640	recycl\$ same virgin	USPAT; US-PGPUB	2003/01/07 17:35
7	299	(recycl\$ same virgin) and polycarbonate\$	USPAT; US-PGPUB	2003/01/07 17:35

L8 ANSWER 51 OF 61 CA COPYRIGHT 2003 ACS

AN 120:246874 CA

TI **Recycling** of shaped articles comprising thermoplastics and/or crosslinked plastics

IN Meier, Helmut Martin; Morbitzer, Leo; Dhein, Rolf; Perrey, Hermann

PA Bayer A.-G., Germany

SO Eur. Pat. Appl., 8 pp.

CODEN: EPXXDW

DT Patent

LA German

IC ICM C08J011-04

ICS C08J011-06; B29B017-00

CC 38-1 (Plastics Fabrication and Uses)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 568893	A1	19931110	EP 1993-106735	19930426
	R: DE, FR, GB, IT				
	DE 4215062	A1	19931111	DE 1992-4215062	19920507
PRAI	DE 1992-4215062		19920507		

AB In a **recycling** process, the title articles are mixed with freshly prepd. thermoplastics and, optionally, with freshly prepd. curable

resins, processed in an injection molding app., a press, or an extruder, and, optionally, cured to give useful articles. In a **recycling** process, a mixt. of cured unsatd. polyester waste, freshly prepd.

polycarbonate, and **polycarbonate** waste was extruded.

ST **recycling** molding thermoplastic crosslinked plastic; polyester unsatd waste **recycling**; waste thermoplastic duroplast **recycling**; **polycarbonate** waste **recycling**;

polyamide waste **recycling**; polypropene waste **recycling**

IT **Recycling** of plastics and rubbers
(of crosslinked resins with thermoplastics)

IT Polythiophenylenes

RL: USES (Uses)

(**recycling** of crosslinked plastics with)

IT Polyamides, miscellaneous

Polycarbonates, miscellaneous

RL: MSC (Miscellaneous)

(**recycling** of crosslinked plastics with)

IT Polyesters, miscellaneous

RL: MSC (Miscellaneous)

(unsatd., **recycling** of, with thermoplastics)

IT 24936-68-3, Makrolon, miscellaneous 25037-45-0, Bisphenol A carbonic

acid copolymer 25038-54-4, Nylon 6, miscellaneous 25085-53-4,

Isotactic polypropene 117869-10-0, Dicyclopentadiene-diethylene

glycol-ethylene glycol-maleic anhydride-styrene copolymer

RL: MSC (Miscellaneous)

(**recycling** of crosslinked plastics with)

WEST



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L3: Entry 40 of 58

File: DWPI

Nov 10, 1993

DERWENT-ACC-NO: 1993-353030

DERWENT-WEEK: 199345

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TITLE: Recycling thermoplastic and/or thermoset moulding - by mixing with non-processed thermoplastics and opt. thermosetting reactive resin, moulding and opt. cure

INVENTOR: DHEIN, R; MEIER, H ; MORBITZER, L ; PERREY, H

PRIORITY-DATA: 1992DE-4215062 (May 7, 1992)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 568893 A1	November 10, 1993	G	008	C08J011/04
DE 4215062 A1	November 11, 1993		005	C08J011/06

INT-CL (IPC): B29B 17/00; C08J 11/04; C08J 11/06

ABSTRACTED-PUB-NO: EP 568893A

BASIC-ABSTRACT:

Re-use of mouldings (I) made from thermoplastics (IA) and/or thermosets (IB) comprises (a) mixing (I) with unprocessed thermoplastics (II) and opt. thermosetting reactive resins (III); (b) moulding by injection, pressing or extrusion; and (c) opt. cure. processing of (IA) with (II) alone or of (IB) with (II) alone is excluded.

USE/ADVANTAGE - The mixts. are as compatible as possible, hence easily produced and processed. The prods. can be used for applications where the external appearance is not important and high mechanical properties are unnecessary, e.g. for railway sleepers, palletes, tunnel linings, tool cases and vehicle parts.

In an example, 10 (wt.) pts. cured UP resin waste, milled to granules finer than 0.3 mm, 45 ptsd. polycarbonate 'Makrolon 2800' (RTM) (IIA) and 45 pts. (IIA) conditioned 5 days at 150 deg. C were compounded in a single screw extruder at 250 deg. C. The regranulate was injection moulded to shoulder rods.

(FILE 'HOME' ENTERED AT 15:49:50 ON 07 JAN 2003)

FILE 'CA' ENTERED AT 15:49:57 ON 07 JAN 2003

L1	4 S VIRGIN(W) POLYCARBONATE?
L2	74 S POLYCARBONATE? AND VIRGIN NOT L1
L3	288808 S RECLAIM? OR RECYCL? OR SCRAP OR REGENERAT? OR REGRIND
L4	842 S L3 AND POLYCARBONATE? NOT (L1 OR L2)
L5	99 S L4 AND C08L069?/IC
L6	743 S L4 NOT L5
L7	674 S L6 NOT C08L?/IC
L8	61 S L7 AND C08J011?/IC

WEST Search History

DATE: Tuesday, January 07, 2003

<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
side by side			result set
<i>DB=DWPI; PLUR=YES; OP=OR</i>			
L9	virgin and polycarbonate\$	18	L9
<i>DB=USPT; PLUR=YES; OP=OR</i>			
L8	L7 not l6	33	L8
L7	virgin with polycarbonate\$	56	L7
L6	virgin adj polycarbonate\$	23	L6
L5	L4 or l3 or l2 or l1	42	L5
L4	l1225\$	36	L4
L3	l1225wp	4	L3
L2	1225 adj wp	1	L2
L1	1225wp	6	L1

END OF SEARCH HISTORY

WEST Search History

DATE: Tuesday, January 07, 2003

<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
side by side			result set
<i>DB=DWPI; PLUR=YES; OP=OR</i>			
L3	L2 not ((c08l069\$)!..IPC.)	58	L3
L2	L1 and polycarbonate\$	120	L2
L1	((c08j011\$)!..IPC.)	5072	L1

END OF SEARCH HISTORY

WEST Search History

DATE: Tuesday, January 07, 2003

Set Name Query

side by side

DB=DWPI; PLUR=YES; OP=OR

L4 11 and (12 or 13)

L3 virgin

L2 reclaim\$ or recycl\$ or scrap\$ or regenerat\$ or regrind

L1 ((c081069\$)!.IPC.)

Hit Count Set Name

result set

174 L4

1510 L3

200030 L2

7965 L1

END OF SEARCH HISTORY

I Number	Hits	Search Text	DB	Time stamp
1	592	((523/343) or (521/48) or (521/41) or (521/40)).CCLS.	USPAT; US-PGPUB	2003/01/07 13:16
2	71	((523/343) or (521/48) or (521/41) or (521/40)).CCLS.) and polycarbonate\$	USPAT; US-PGPUB	2003/01/07 13:48
3	1544	((525/67) or (525/439) or (525/462) or (525/464)).CCLS.	USPAT; US-PGPUB	2003/01/07 13:49
4	132	((525/67) or (525/439) or (525/462) or (525/464)).CCLS.) and (virgin or scrap or reclaim\$ or recycle\$ or regrind or regenerat\$)	USPAT; US-PGPUB	2003/01/07 14:21
5	1960	((524/127) or (524/141) or (524/157) or (524/267) or (524/269)).CCLS.	USPAT; US-PGPUB	2003/01/07 14:22
6	409	((524/127) or (524/141) or (524/157) or (524/267) or (524/269)).CCLS.) and polycarbonate\$ not (((525/67) or (525/439) or (525/462) or (525/464)).CCLS.) and (virgin or scrap or reclaim\$ or recycle\$ or regrind or regenerat\$))	USPAT; US-PGPUB	2003/01/07 14:22
7	25	((524/127) or (524/141) or (524/157) or (524/267) or (524/269)).CCLS.) and polycarbonate\$ not (((525/67) or (525/439) or (525/462) or (525/464)).CCLS.) and (virgin or scrap or reclaim\$ or recycle\$ or regrind or regenerat\$))) and (reclaim\$ or recycle\$ or scrap\$ or regenerat\$ or regrind)	USPAT; US-PGPUB	2003/01/07 14:23

WEST

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L4: Entry 78 of 174

File: DWPI

Sep 9, 1997

DERWENT-ACC-NO: 1997-498427

DERWENT-WEEK: 200219

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TITLE: Recycling polycarbonate resin mouldings - by mixing with another polycarbonate resin having lowered molecular weight

PRIORITY-DATA: 1996JP-0039555 (February 27, 1996)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 09235405 A	September 9, 1997		004	C08J011/04
JP 3262983 B2	March 4, 2002		004	C08J011/04

INT-CL (IPC): C08 J 11/04; C08 L 69:00

ABSTRACTED-PUB-NO: JP 09235405A

BASIC-ABSTRACT:

Method of recycling (a) polycarbonate resin mouldings with lowered molecular wt. comprises mixing them with (b) another polycarbonate resin having higher molecular wt. than the polycarbonate resin in such an ratio as to satisfy equation $0.8 (Ax + By) / (x + y)$ at most M at most $1.2 (Ax + By) / (x + y)$ (1) and melting the mixt.. A = viscosity average molecular wt. of polycarbonate resin mouldings with lowered molecular wt.; B = viscosity average molecular wt. of another polycarbonate resin; x = amt. (pt. wt.) of polycarbonate resin mouldings with lowered molecular wt. y = amt. (pt. wt.) of another polycarbonate resin; M = viscosity average molecular wt. of recycled polycarbonate resin

Pref. (a) are sheet-like polycarbonate resin mouldings the molecular wt. of which is lowered by being used for a long time. (b) is new polycarbonate resin having viscosity average molecular wt. 5,000-80,000 higher than that of the recycled polycarbonate resin.

ADVANTAGE - Polycarbonate resin mouldings the molecular wt. of which is lowered by being used for a long time can be recycled without using large- scaled equipments or appts.